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10/591,218	11/21/2007	Weizhong Yan	4202-02800	6632

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EXAMINER	
ZAIDI, IQBAL	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,218	YAN, WEIZHONG	
	Examiner	Art Unit	
	IQBAL ZAIDI	2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,7,9 and 19-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7,9 and 19-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to applicant's amendment filed on Jan 15, 2010 for Application No. 10591218.

2. Claims 1-3, and 7, and 9, and 19-35, are pending in this application.

3. Claims 7, and 24, and 33 are amended by applicant's amendment.

4. Applicant's arguments in respect to the new issues of claims 1, and 7, and 34, have been considered but they are not persuasive.

5. Examiner withdraws objection of claims 1, and 30, and 35.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1-2, and 7, and 9, and 19, and 25-33, and 34-35** are rejected under 35 U.S.C 102(e) as being anticipated by Cassiday et al (US 7042837, May 9, 2006) (Hereinafter Cassiday et al).

Regarding **claim 1,** Cassiday discloses a method comprising: receiving a data packet comprising a data packet identifier *(column 2, routing table (first routing table) has a column for storing a node identifier and another column for storing a transmitter identifier corresponding to a link)*; identifying a destination port corresponding to the data packet identifier from a first routing table, wherein there is a first relationship between the data packet identifier and the destination port in the first routing table*(column 2, The first table searched is a primary routing table(first routing table) to retrieve a primary link)*; and transmitting the data packet via a transmitting port corresponding to the destination port based on a second relationship between the destination port and the transmitting port in a second routing table*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter without storing the packet in the transmitter's buffer, thus only sharing the alternative physical link of the node)*, wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port*(column 2, A row in the routing table corresponds to a neighboring node and at least one interconnect link for transmitting data to that node. These components enable the node to continue with the flow of a data packet to a destination port without (regardless) when an interconnect link along the path to that node fails)*.

Regarding **claim 2,** Cassiday discloses transmitting the data packet via a transmitting port corresponding to the destination port based on a second relationship between the destination port and the transmitting port in a second routing table comprises*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link)*: searching out the transmitting port corresponding to the destination port according to the second relationship*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter)*; and transmitting the data packet via the transmitting port*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter without storing the packet in the transmitter's buffer, thus only sharing the alternative physical link of the node)*.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claim 3** is rejected under 35 U.S.C 103(a) as being unpatentable over Cassiday et al (US 7042837, May 9, 2006) in view of Nakamura et al (US 20050099983, May 12, 2005)

Regarding **claim 3,** Cassiday discloses all aspects of the claimed invention, except *the order of the second relationship is set according to the sequence of the port numbers of the destination port*.

Nakamura is the same field of invention teaches the order of the second relationship is set according to the sequence of the port numbers of the destination port *(page 2, When a received packet includes path information, the packet analyzer 2A analyzes the path information, source address, destination address, and packet ID, a sequence number, port number, or other information identifying the packet)*.

Cassiday and Nakamura are analogous art because they are from the same field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Cassiday to include the teaching of Nakamura because it is providing communication terminals and communication networks that improve on conventional single-path and multipath routing

schemes in order to stabilize communication, avoid radio interference, and use network resources effectively.

4. - 6. (Canceled)

Regarding **claim 7,** Cassiday discloses a network device, comprising: a processor *(column 1,* a first routing unit *(column 2, The first table searched is a primary routing table (first routing table) to retrieve a primary link)*; and a second routing unit *(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link)*, wherein the processor is configured to communicate with the first routing unit and the second routing unit *(column 1, The failover storage area is a shared resource in the node and consists of two first-in, first-out stacks for processing and routing the failover data packets. If needed, an alternative link is selected for the data packet and the data packet is routed to a transmitter associated with the alternative link. An alternative link is selected using a primary and secondary routing table, part of the shared resource of the node)*, wherein the first routing unit is configured to save a first relationship between a data packet identifier and a destination port in a first routing table *(column 10, querying a primary route using the destination node identifier retrieve a primary link),* and identify the destination port corresponding to the data packet identifier from the first routing table after receiving a data packet *(column 8, In the primary table (first routing table), the second column contains the primary or "first choice" link to be used for a corresponding node.*

For example, for sending a packet to Node 0 from Node 1, Node 1's primary routing table instructs that for Node 0, Link A should be used), and wherein the second routing unit is configured to save a second relationship between the destination port and a transmitting port in a second table*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter(transmitting port))*, and transmit the data packet via the transmitting port corresponding to the destination port based on the second relationship*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter by the alternative physical link of the node(destination port))*.

8. (Canceled)

Regarding **claim 9,** Cassiday discloses the network device according to Claim 7, wherein the second routing unit is further configured to search out the transmitting port corresponding to the destination port according to the second relationship*(column 2, If the primary link is a failed link, a secondary route table is*

queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter(search out the transmitting port) by the alternative physical link of the node(destination port)).

Regarding **claim 19,** Cassiday discloses the method according to Claim 1, wherein the port number of the transmitting port is set to a port number of the destination port in the second table when the transmitting port is operating normally*(column 6, The packet is modified to mark it as a failover packet by setting a failover-pkt bit. The CRC is then calculated (based on the modified packet) and attached. The ONID is embedded into this CRC in the same manner as Sequence numbers are embedded. This is used to uniquely oppositely mark the originator of the failover packet. AS will be seen, the termination node will need this information in accepting the packet)*.

10. **Claim 20-24** are rejected under 35 U.S.C 103(a) as being unpatentable over Cassiday et al (US 7042837, May 9, 2006) in view of Nakamura et al (US 20050099983, May 12, 2005)

Regarding **claim 20,** Cassiday discloses all aspects of the claimed invention, except *when there is a service failure in any destination port, the*

transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port.

Nakamura is the same field of invention teaches when there is a service failure in any destination port, the transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port*(page 6, a single main path passing through intermediate terminals with IDS included in the path information, and backup paths passing through one or more intermediate terminals, the backup paths being used only when the main path fails).*

Cassiday and Nakamura are analogous art because they are from the same field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Cassiday to include the teaching of Nakamura because it is providing communication terminals and communication networks that improve on conventional single-path and multipath routing schemes in order to stabilize communication, avoid radio interference, and use network resources effectively.

Regarding **claim 21,** Cassiday discloses each destination port appears only once in the second table*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of*

two data stacks, the data packet is sent out by the selected transmitter(search out the transmitting port) by the alternative physical link of the node(destination port)).

Regarding **claim 22,** Cassiday discloses the destination port appears a plurality of times in the first routing table *(column 8, see Fig 6, shows, the structure of failover route tables, each node has a primary and route table, Each table is made up of n rows and two columns, where n is the number of nodes in the network)*.

Regarding **claim 23,** Cassiday discloses the first routing table is not modified when there is a service failure in any destination port*(column 2, The first table searched is a primary routing table to retrieve a primary link. If the primary link is a failed link (not modified), a secondary route table is queried to retrieve an alternative link)*.

Regarding **claim 24,** Cassiday discloses the data packet is not transmitted on the first transmitting port when a failure occurs in the first transmitting port*(column 2, The first table searched is a primary routing table to retrieve a primary link. If the primary link is a failed link (not transmitted), a secondary route table is queried to retrieve an alternative link)*.

Regarding **claim 25,** Cassiday discloses the network device according to Claim 7, wherein the port number of the transmitting port is set to a port number of the destination port in the second table when the transmitting port is operating normally*(column 6, The packet is modified to mark it as a failover packet by setting a failover-pkt bit. The CRC is then calculated (based on the modified packet) and attached. The ONID is embedded into this CRC in the same manner as Sequence numbers are embedded. This is used to uniquely oppositely mark the originator of the failover packet. AS will be seen, the termination node will need this information in accepting the packet)*.

Regarding **claim 26,** Cassiday discloses when there is a service failure in any destination port, the transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port *(column 2, A data packet is received at a first node having a failed link where the data packet is scheduled to use the failed link. Data goes into the transmission buffer of the failed link upon exiting the transmit buffer. It is converted and sent to a failover storage area. The link is chosen when the packet is pushed to the failover storage area. The data packet is routed to a failover storage area. When the packet is pushed to the failover storage area, an alternate link (backup port) is selected for the data packet and the data packet is routed to a transmitter associated with the alternative link).*

Regarding **claim 27,** Cassiday discloses each destination port appears only once in the second table*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter (search out the transmitting port) by the alternative physical link of the node(destination port))*.

Regarding **claim 28,** Cassiday discloses the order of the second relationship is set according to the sequence of the port numbers of the destination port*(column 6, The packet is modified to mark it as a failover packet by setting a failover-pkt bit. The CRC is then calculated (based on the modified packet) and attached. The ONID is embedded into this CRC in the same manner as Sequence numbers are embedded. This is used to uniquely oppositely mark the originator of the failover packet. AS will be seen, the termination node will need this information in accepting the packet)*.

Regarding **claim 29,** Cassiday discloses the processor is configured to monitor each destination port in real time and modify the transmitting port corresponding to the fault destination port into a backup port of the fault destination port when a service failure is found in the destination port *(column 1,*

enabling the continued, realtime, transmission of data packets in a data network when a link in the network has failed).

Regarding **claim 30,** Cassiday discloses the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port*(column 2, A row in the routing table corresponds to a neighboring node and at least one interconnect link for transmitting data to that node. These components enable the node to continue with the flow of a data packet to a destination port without (regardless) when an interconnect link along the path to that node fails)*.

Regarding **claim 31,** Cassiday discloses the first routing table is not modified when there is a service failure in any destination port*(column 2, The first table searched is a primary routing table to retrieve a primary link. If the primary link is a failed link (not modified), a secondary route table is queried to retrieve an alternative link)*.

Regarding **claim 32,** Cassiday discloses the destination port appears a plurality of times in the first routing table *(column 8, see Fig 6, shows, the structure of failover route tables, each node has a primary and route table, Each table is made up of n rows and two columns, where n is the number of nodes in the network)*.

Regarding **claim 33,** Cassiday discloses the data packet is not transmitted on the first transmitting port when a failure occurs in the first transmitting port*(column 2, The first table searched is a primary routing table to retrieve a primary link. If the primary link is a failed link (not transmitted), a secondary route table is queried to retrieve an alternative link)*.

Regarding **claim 34,** Cassiday discloses a device comprising: a first routing unit configured to save a first relationship between a data packet identifier and a destination port in a first routing table*(column 2, The first table searched is a primary routing table(first routing table) to retrieve a primary link)*; and a second routing unit configured to save a second relationship between the destination port and a transmitting port in a second routing table*(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter without storing the packet in the transmitter's buffer, thus only sharing the alternative physical link of the node)*.

Regarding **claim 35,** Cassiday discloses the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port*(column 2, A row in the routing table corresponds to a neighboring node and at least one interconnect link for transmitting data to that*

node. These components enable the node to continue with the flow of a data packet to a destination port without (regardless) when an interconnect link along the path to that node fails).

Response to Argument

11. Applicant's arguments see pages 7-14 of Applicant's Remarks, Jan 14, 2010, with respect to the rejection(s) of claim(s) 7, and 9, and 26-27, and 31-34 under 35 U.S.C. 102(e) and the rejection(s) of claims 1-3, and 19-25, and 28, and 30, and 35 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Cassiday et al (US 7042837, May 9, 2006), Nakamura et al (US 20050099983, May 12, 2005).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are:

- Wakayama et al. (US 20030172143, Sep. 11, 2003) teaches Access Node Apparatus and Method for Internet Using Condition Analysis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IQBAL ZAIDI whose telephone number is (571)270-3897. The examiner can normally be reached on 7:30a.m to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NGO RICKY can be reached on 571-272-3139. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ricky Ngo/ IZ
Supervisory Patent Examiner, Art Unit 2464